STANDARD FORM NO. 64 [redacted] A/BE 24-1

Office Memorandum • UNITED STATES GOVERNMENT

TO A: [redacted] DATE: 4 August 1954

FROM A: [redacted]

SUBJECT: Methylcholanthrene

The following are brief notes on Methylcholanthrene, in response to your request of August 3, 1954.

Literature: George Wolf, Assistant Professor, University of Illinois. "Chemical Induction of Cancer", 1953. see esp. p.29,44 etc. By means of a special genetic technique, Strong, J.N.C.I.5, 339, 1945 induced tumors with methylcholanthrene in many different tissues. Methyl Cholanthrene is a good initiator (high tumor incidence) and a good promoter (short latent period) -p.85 Wolf.

Hartwell: Survey of Compounds tested for Carcinogenic properties PHS: 149 National Institute Cancer

E. C. HUBER: Public Health Report Supplement 209, 1948 on Environmental and Occupational Cancer. National Institute Cancer

Louis F. Fieser and Mary Fieser: Natural Products related to Phenanthrene, 3rd edition 1949, p. 159: Methyl cholanthrene was found capable of initiating malignant growth in test animals by Gafteras Z. physiol, Chemie 214,89, 1933.

"Methylcholanthrene is now recognized as probably the most potent known carcinogen in the production of tumors of various types.

If this hydrocarbon can be produced in the laboratory by chemical transformations of normal constituents of the human organism, it is possible that the substance may arise in the body through a process of abnormal metabolism - and initiate cancer. *

The degradations of desoxycholic acid (one of the normal constituents of human bile), cholic acid and cholesterol (a substance in all tissues of the body) all involve low-yield pyrolytic reactions; they have not been effected under anything approaching physiological conditions; careful processing of cancerous tissues and urines has failed to establish the presence of methylcholanthrene. *

There is thus no evidence that this or other hydrocarbon carcinogen plays any role in the etiology of human cancer.

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On the other hand, present evidence does not exclude such a possibility. Every minute amount of methylcholanthrene could produce a few malignant cells; these - by cell-division and without.

Further stimulation from the initiating agent could lead to a palpable cancerous proliferation after an induction period during which the initiating agent may have been eliminated from the system."

SOURCE: 3-Methyl-Cholanthrene: 4383 Cat. Chemical Cpds. Fischer Scientific Co. 7722 Woodbury, Silver Spring, Washington, D. C.
Price: 1/2 g. $4.40
1 g. $8.25

* Carl Max Hasselmann and Hans Otto Johne in Arch. Dermato & Syphilis 188, 693-707, 1950 reported primary multiple skin carcinoma with simultaneous tertiary syphilis.
Disturbances of the cholesterol metabolism, present in syphilis cases of long standing, as well as cancer cases are discussed with respect to the chemical reaction between the physiological substances: cholesterol, bile acid and desoxycholic acid, and the cancerogenic substances cholanthrene and methylcholanthrene. - Both Huber and Hartwell appear very knowledgable and are connected with the National Institute Cancer.

A [redacted]

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